GSA/DOE: Request for Information Healthy and Resilient Buildings

U.S. General Services Administration | Center for Emerging Building Technologies | Proving Ground Program (GPG)

U.S. Department of Energy | Office of Energy Efficiency and Renewable Energy | Building Technologies Office (BTO) | Federal Energy Management Program (FEMP) | Solar Energy Technologies Office (SETO)

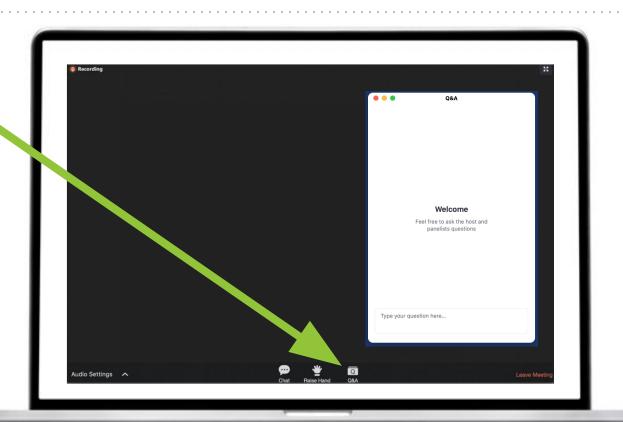




How to Ask Questions

Click the Q&A button to ask questions.

The webinar will be recorded and shared.



Agenda

- Overview
- Program Leads
 - GSA
 - DOE
- What Are We Looking For?
- RFI Mechanics and What it Means to Participate
- Q&A

Healthy & Resilient Buildings

- Maintain Healthy Indoor Air
- Increase Building Resilience
- Improve Onsite Photovoltaics

GSA & DOE Seek Technologies for Healthy & Resilient Buildings

Joint Request for Information Closes On

FRIDAY, DECEMBER 4, 2020

The U.S. General Services Administration (SSA), in collaboration with the U.S. Department of Energy (10E), has issued a Request for Information (RFI) calling for Innovative resource-efficient technologies that Improve commercia building health and resilience. Technologies will be evaluated under dynamic, real-world conditions in federally or privately-cowned commercial buildings. Responses to this RFI may be submitted by a single vendor or by a team and will be evaluated based on the technology's potential to increase building health and resilience and lower operating costs.

Validate Real-World Performance

Participation can increase market acceptance of your technology by validating realworld performance. Technology evaluations help inform public- and private-sector investment decisions, accelerating commercialization as well as adoption within the federal government and the commercial building industry.

Visit gsa.gov/gpg for more information and to access the RFI.

TARGETED TECHNOLOGIES

This year, we're targeting innovative preand early-commercial technologies in three broad categories. Commercial technologies that are broadly in use and readily available are not appropriate candidates.

- Maintain Healthy Indoor Air Integrated solutions, including efficient ventilation strategies, that mitigate threats to indoor air quality without compromising energyefficient operations.
- Increase Building Resilience
 Technologies that extend passive
 survivability and/or support
 continuity of operations.
- Improve Onsite Photovoltaics (PV)
 Technologies of interest include
 U.S. manufactured high-efficiency
 PV, BIPV and innovative PV and
 storage systems.
- ▶ Review and Complete the RFI by 12/04/20 beta.sam.gov keyword "JEZ47PA0121R0000"
- ► Attend the Webinar Thursday, 11/5, 1 pm ET register at: gsa.gov/gpg
- ▶ Questions? gpg@gsa.gov



GSA's Proving Ground program leverages GSA's real estate portfolio to evaluate innovative building technologies. The program aims to drive down operational costs in federal buildings and help lead market transformation through the deployment of new technologies. gsa.gov/gpg



The mission of DOE's Office of Energy Efficiency and Renewable Energy (EERE) is to create and sustain American leadership in the transition to a global clean energy economy. Its vision is a strong and prosperous America powered by clean, affordable and secure energy.energy_overe/effice-energy-efficiency-renewable-energy



Today's Presenters



Kevin Powell
GSA - Program Director,
Center for Emerging
Building Technologies



Robert Meagley

DOE – Technology Manager,

Solar Energy Technologies

Office



Wale Odukomaiya
NREL – Research Engineer,
Building Energy Science
Group



Michael Hobson
GSA – Project Manager,
Center for Emerging
Building Technologies



GSA Proving Ground Program (GPG)

GSA: Largest Single Portfolio of Commercial Office Space

8,721	1,574
PROPERTIES MANAGED, 377M ft ²	OWNED, 185M ft ²

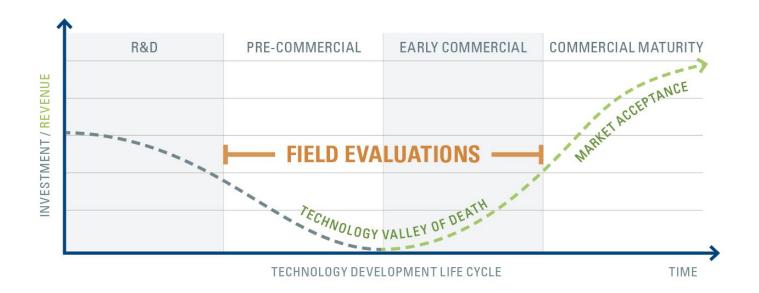
\$380M annual energy costs

At 52.2 kBTU/ft²/yr, GSA buildings are 33% more efficient than typical U.S. commercial buildings

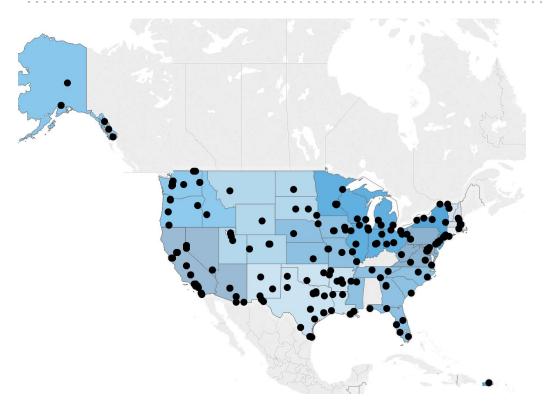


Why Field Evaluations?

Address the lack of objective performance and cost data that inhibit some technologies from finding their customer base.



Center for Emerging Building Technologies: 2011-2019



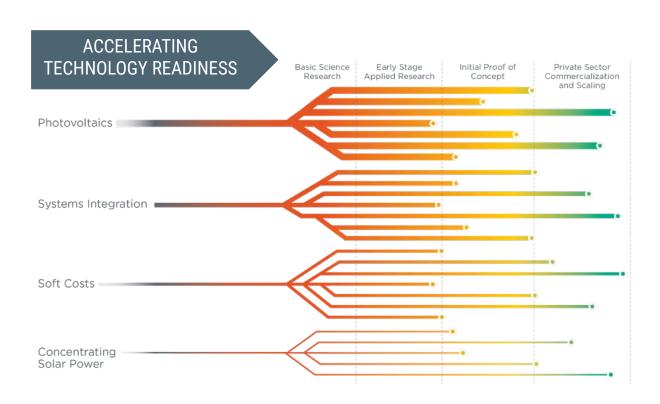
- **660** Technology Applications
 - **70** Technologies Evaluated
 - **42** Reports Published
 - 15 Technologies Deployed in 500+ Facilities

Total Lifecycle Cost Avoidance

\$199M



Solar Energy Technologies Office (SETO)



SETO Manages

>375 Active Projects in 38 States and DC

25% Business/Non-Profit

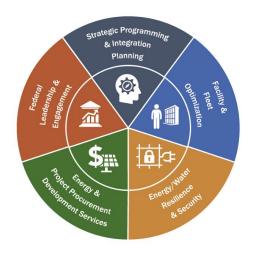
40% National Labs

25% Universities



SETO Contact: Robert.Meagley@ee.doe.gov

Federal Energy Management Program (FEMP)



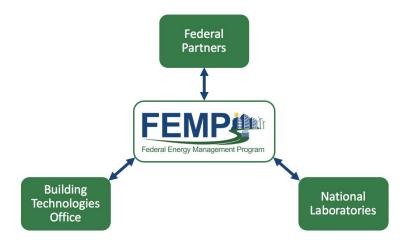
FEMP Mission

FEMP facilitates strategic energy management to enable federal agencies to meet energy-related goals, ensure mission assurance during normal operations, and prepare for mission assurance during conditions that impact normal operations.

FEMP Technology Validation Role

FEMP facilitates collaboration with DOE, federal partners, and National Laboratories to connect potential validation sites with solution providers.

FEMP Contact: Hayes.Jones@ee.doe.gov



Building Technologies Office (BTO)

Better Buildings Partners Are

FORTUNE 100

32 of the Fortune 100 Companies

BTO Technology Field Validation

Connect national laboratories with technology providers and recruited host sites to provide technical assistance and 3rd party measurement and verification.

BTO Contact: Amy.Jiron@ee.doe.gov



13% of All Commercial Building Space



12 of the Top 25 U.S. Employers



28 State Governments



90 Local Governments



Better Buildings: Voluntary Partners Help Inform R&D Priorities





RFI: What Are We Looking For?

Technology Maturity

Pre and early commercial
 Commercial technologies broadly in use and readily available are not appropriate candidates

Technology Categories

- Energy-efficient indoor air quality management
- Ventilation strategies to promote healthy indoors
- High-efficiency onsite photovoltaics and storage
- Energy-efficient, resilient technologies to extend passive survivability and continuity of operations



Efficient Indoor Air Quality Management

Integrated solutions that enable energy efficiency and manage indoor air quality

Example technologies:

- Combined energy efficiency and IAQ as integrated request
- Multi-zonal sensing and control
- Sensor-driven indoor air controls



Ventilation for Healthy Indoor Environment

Integrated efficient ventilation strategies that mitigate threats to indoor air quality

Example technologies include:

- Higher performance HVAC filtration
- Improved air sealing in ducts
- Efficient decentralized air-filtration



Improved Onsite Photovoltaics

Example technologies include:

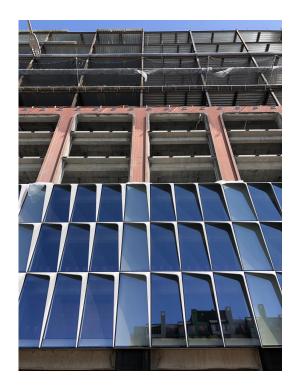
- High-efficiency PV with improved materials construction, fabrication process and/or installation methods
- Building-integrated photovoltaics
- Innovative PV and storage systems



Resilient Technologies that Extend Operation

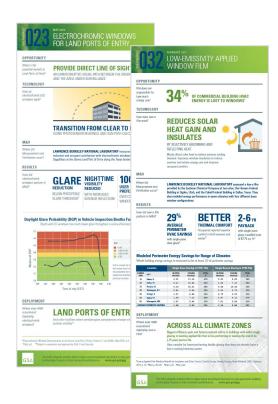
Example technologies include:

- Advanced opaque retrofit envelope technologies that support passive heating, cooling & ventilation
- Window retrofit approaches
- Phased control or load coordination
- Software solutions to enable control and prioritization of power to critical loads
- Water conservation technologies that support continued operation when water supply is disrupted



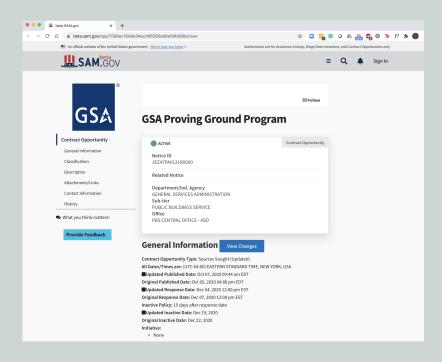
Vendors Must Demonstrate Measurable Success Criteria

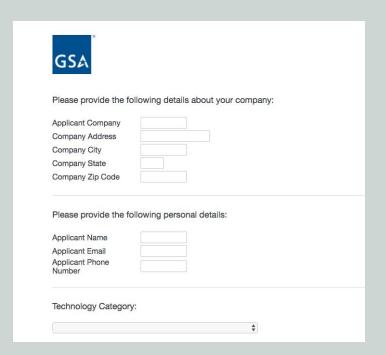
- Impact of the technology or solution in terms of duration of maintained services for productivity, continuity of operations, improved indoor air quality, and occupant comfort; and
- Impact of the technology or solution in terms of payback, energy savings or utility cost savings, or any combination of the foregoing, at the technology and whole- building level.





RFI: How to Apply Applications Due by Friday, December 4, 11:59 PM EST





beta.sam.gov, Solicitation #JEZ47PA0121R0000

RFI Application



Factors considered in selecting a technology:

- 1. Innovation
- 2. Performance
- 3. Costs/Savings
- 4. Deployment Potential
- 5. Technical Risk

Benefits to Participating in a Testbed Evaluation

- Participate in well-supported, high-visibility GSA and DOE programs
- Engage in a full-scale pilot with M&V managed by others
- Receive independent insights regarding technology fit for public- and private-sector buildings
- Inform public- and private-sector investment decisions through publicly available M&V findings
- Increase market acceptance by validating real-world performance

Program Participation: Your Contribution

Technology

- GSA Core equipment for evaluation must be (1) gifted to the U.S. government or (2) provided via alternative financing mechanism (i.e. UESC). Equipment installation will be funded by GSA.
- DOE Project details and costs will be negotiated between vendor and host site partner.

Time and Travel

- Provide input to labs on test bed design, project plan, and evaluation report.
- Provide guidance on installation, commissioning, and tenant engagement.
- Travel to 1-3 on-site meetings.

Neither GSA nor DOE will provide direct funding to participate in the evaluation

Roles and Responsibilities

Federal Program Host Site National Lab Tech Vendor Design project plan Overall project Oversee all Provide technology contracting management Site evaluation Support design, Coordinate and Manage technology installation and Collect and fund M&V installation commissioning analyze data Lead report review Facilitate tenant Author technical and publication engagement report GPG only: Fund Provide user tech installation feedback

RFI: Potential Host Sites

DOE

 All commercial buildings in the U.S., including privately-owned buildings, federal buildings outside of GSA's jurisdiction, and institutional buildings. Vendors are encouraged to bring your own site.

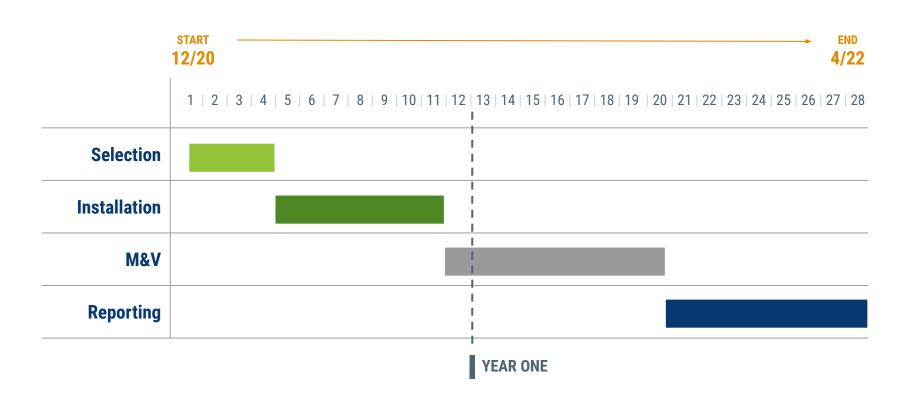
GSA

- Federally-owned buildings in GSA's portfolio
- Large urban buildings with central plant
 - 90% buildings > 100,000 ft², 80% portfolio energy spend: buildings > 200,000 ft²
- Majority in mild climate zone
 - > 80% in ASHRAE climate zones 3, 4, 5
- Energy efficient: Majority Energy Star 80 or better

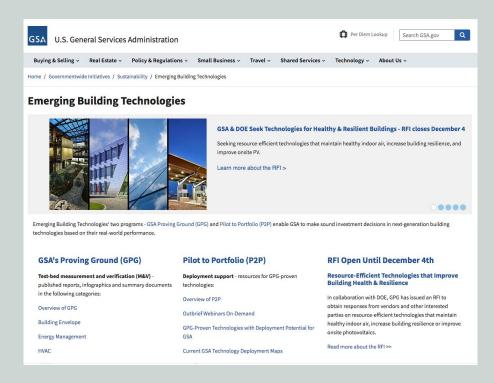
RFI Timeline

RFI Closes	December 4, 2020
GSA/DOE Reviews Completed	February 4, 2021
Semi-Finalists Identified and Notified	February 11, 2021
Semi-Finalist Presentations (virtual)	March 10 and 11, 2021
Finalist Selected	March 31, 2021

Assessment Timeline



RFI: Program Information and Resources





gpg@gsa.gov | gsa.gov/gpg

Applications Due by Friday, December 4, 2020 11:59 PM EST



